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THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION IN MOBILE BANKING

GRADUATION THESIS

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Istanbul, May 2018

PREFACE

During my thesis study entitled "The effect of service quality on customer satisfaction in mobile banking", firstly I want to thank my family. I am deeply grateful to my mother, father and sister for their support during the program.

I thank my thesis advisor Ayşe İlgün Kamanlı, for supporting me during hard times. In addition to this, I thank Özge Barüönü Latif for supporting me during my analysis part.

I also thank Merve Sernur Çonkarlı and Kadir Doğrubakar for their friendly support. Thanks to them my survey has reached the desired number of people in a short time.

And last but not least, my deepest blessing goes to my friend, Nilüfer Cemre Can, who was always there with her endless support, encouragement, patience and everlasting belief in me during the program.

Thank you all…

ABSTRACT

From past to present, the amount of people who use mobile banking applications has proliferated quickly. Mobile banking spread over a wide area in a short time and reached a wide audience. Therefore, nowadays mobile banking has become important, so it has become necessary to measure service quality for mobile banking in academic studies.

The concept of quality must be measurable, because it is important to understand and interpret the work of people. The quality of the tangible products is identifiable and measurable. But it is difficult to measure the quality of services because services have some unique characteristics. These characteristics are intangibility, simultaneous production and consumption, heterogeneity and lack of resistance.

This study aims to examine whether the E-S Qual service quality extents affect customer satisfaction in the mobile banking of Turkey. In this study customer satisfaction is used as dependent variable, four extents of E-S Qual scale which are efficiency, system availability, fulfillment and privacy are used independent variables. The survey has been applied through social media. Convenience sampling method was used as sampling method. The size of the sample is calculated based on Morgan's sample size table. According to this table, the survey was sent to 384 individuals who use individual mobile banking applications. 350 people participated in the survey. The data of survey were analyzed by using descriptive statistics, factor analys, reliability analys and linear regression analys. The results showed that the four variables which are efficiency, system availability, fulfillment and privacy have significant positive relationship with customer satisfaction.

Keywords: E-S Qual, Service Quality, Mobile Banking, Customer Satisfaction

ÖZET

Geçmişten günümüze, mobil bankacılık uygulaması kullanan insanların sayısı hızla artmaktadır. Mobil bankacılık kısa sürede çok geniş bir alana yayılmıştır ve geniş kitlelere ulaşmıştır. Bu sebeple günümüzde mobil bankacılık önemli bir hale gelmiştir ve bununla birlikte akademik çalışamalarda mobil bankacılık açısından hizmet kalitesini belirlemek gerekli hale gelmiştir.

Kalite kavramı ölçülebilir olmalıdır, çünkü insanların yaptıkları işleri anlamak ve değerlendirmek önemlidir. Somut ürünlerin kalitesi tanımlanabilir ve ölçülebilirdir. Ancak hizmetlerin kalitesini ölçmek zordur, çünkü hizmetlerin bazı benzersiz özellikleri vardır. Bu özellikler, somut olmayan, eşzamanlı üretim ve tüketim, heterojenlik ve dirençsizliktir.

Bu çalışma E-S Qual hizmet kalitesi boyutlarının Türkiye mobil bankacılığında müşteri memnuniyetini etkileyip etkilemediğini gözlemlemek amacıyla yapılmıştır. Bu çalışmada müşteri memnuniyeti bağımlı değişken olarak, E-S Qual ölçeğinin dört boyutu olan verimlilik, sistem uygunluğu, yerine getirme ve gizlilik unsurları bağımsız değişkenler olarak kullanılmıştır. Anket sosyal medya aracılığı ile uygulanmıştır. Örnekleme metodu olarak uygun örnekleme yöntemi kullanılmıştır. Örneklem büyüklüğü Morgan'ın örneklem büyüklüğü tablosu baz alınarak hesaplanmıştır. Bu tabloya göre anket bireysel mobil bankacılık uygulaması kullanan 384 kişiye gönderilmiştir. 350 kişi ankete katılım sağlamıştır. Anket sonuçları betimleyici istatistikler, faktör analizi, güvenirlik analizi ve basit doğrusal regresyon kullanılarak analiz edilmiştir. Sonuçlar, verimlilik, sistem uygunluğu, yerine getirme ve gizlilik olmak üzere dört değişkenin müşteri memnuniyeti ile anlamlı pozitif bir ilişkiye sahip olduğunu göstermiştir.

Anahtar Kelimeler: E-S Qual, Hizmet Kalitesi, Mobil Bankacılık, Müşteri Memnuniyeti

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ABBREVIATIONS

ATM	:	Automatic Teller Machine
cHTML	:	Compact Hypertext Formatting Language
E-SERVICE	:	Elektronic Service
E-S QUAL	:	Elektronic Servqual
GNP	:	Gross National Product
GPRS	:	General Packet Radio Service
HTTP	:	Hypertext Transfer Protocol
HTML	:	Hypertext Markup Language
ID	:	Identification Number
PDA	:	Personel Digital Assistant
SMS	:	Short Message Service
XML	:	Extensible Markup Language
TEB	:	Turkish Economy Bank
WAP	:	Wireless Application Protocol
WML	:	Wireless Markup Language

1. INTRODUCTION

At the present time, the widespread use of mobile devices has played an important role in the development of mobile banking. In the literature, service quality and customer satisfaction in mobile banking sector has been studied in the world. In terms of people who use mobile banking, it is important to measure service quality and customer satisfaction. For this reason, this study was conducted to examine whether the E-S Qual service quality extents affect customer satisfaction in the mobile banking of Turkey.

The thesis topic is the effect of service quality on customer satisfaction in mobile banking. This study aims to determine whether the dimensions of E-S Qual service quality have an effect on customer satisfaction in mobile banking. Another aim is to specify the dimension to how much the E-S Qual service quality extents influence customer satisfaction in mobile banking of Turkey. There are some studies in world literature that try to determine the quality of service and measure customer satisfaction in mobile banking. However, a comprehensive customer satisfaction and service quality study has not been conducted in the field of mobile banking in Turkey. For this reason, this study has a great importance.

The first part of study is the introduction. In the second part of the study, It is referred to development of mobile banking in Turkey, platforms of mobile banking and advantages and disadvantages of mobile banking. In the third part of the study, the definition of service and quality concepts, the characteristics of service concept, the dimensions of quality are mentioned. In addition, the main service quality measurement models are described and the E-S qual quality of service scale is discussed in detail. In the fourth part of the study, the definition of customer satisfaction, the relationship between e-service quality and customer satisfaction and the advantages of customer satisfaction in terms of companies are mentioned. In the fifth part of the study, the research has been completed. The survey results include factor analysis, reliability analysis and regression analysis have been analyzed. The findings obtained after the analysis were interpreted in the conclusion. The sixth part of study is the conclusion.

2. MOBILE BANKING

2.1 Mobile Banking Concept

If it is necessary to describe mobile banking, it is a platform where people make banking transactions with devices known as mobile phones or personal digital assistants (Barnes & Corbitt, 2003). To mention a more recent definition, mobile banking is the banking process operated with mobile phones, smartphones and PDAs, excluding laptop computer. With mobile banking, SMS banking and WAP banking applications were implemented for the first time. With the rapid spread of smartphones, more advanced services have been provided. Banks have adopted mobile banking applications easily because the potential advantages are very high. (Seyrek & Akşahin, 2016).

With the development of mobile phone networks around the world and the development of mobile devices, mobile banking has become an important distribution channel. Mobile banking is preferred all over the world for various reasons. Mobile banking has a clear and promising feature for innovation. Mobile banking has entered our lives when customers send messages via their phones. During these periods there was only the possibility of questioning the account information and making a loan application at that time. Today, mobile banking offers a wide range of banking services through all kinds of mobile devices (Koç, 2015).

The progress in wireless technology has undoubtedly been a major influence on the increase of mobile phone users and the rapid development of operations with the use of mobile devices. New business opportunities in communication, shopping and commerce, wireless technology and widespread use of mobile devices have occured as a result. Through high data transfer and online technology, people can exchange information with very high volumes through mobile devices (Singh, Srivastava & Srivastava, 2010). Mobile banking is also known as the subdivision of electronic banking (Suoranta & Mattila, 2003).

Mobile banking is particularly popular with young users. For this reason, it is important that the services offered are fast and continuous. Mobile banking is also preferred in rural areas in developed countries and in remote areas. For this reason, the development of mobile banking market is of great importance. Because mobile banking

needs access to unreachable areas and new customer segments. In this way access to banking services and products is provided (Koç, 2015).

Factors affecting the positive perception of mobile financial services in the community are given below (Khraim, Soubaki & Khraim, 2011):

1- The number of people using mobile phones has increased significantly.
2- The mobility that comes with the embodiment of the world economies have made mobile services necessary for users.
3- The young generation is equipped with contemporary information and communication services.
4- Renewing the procedures applied in the sector and increasing the speed of data transfer made mobile tools powerful.

2.2 Mobile Banking Types

The first work on mobile banking in the world are made in Finland. And first in 1992 Nordbanken customers paid their bills via mobile phones and were able to check their debts. The procedures in wireless electronic services and the spread to universal markets is one of the basic pillars of mobile banking. Generally, platforms used for mobile banking are short message service (SMS) and wireless application protocol (WAP) banking. In addition, i-mode, a mobile banking platform developed in Japan, is based on both hypertext formatting language (cHTML) or Java (Barnes & Corbitt, 2003).

2.2.1   SMS banking

SMS banking, the simplest mobile banking application, is used for operations like transferring information about bank accounts of customers (Mallat, Rossi & Tuunainen, 2004).

Logically, when writing a text message, it is passed through a slow process. In SMS banking, the input message format emerges as a simple and concise way of using. This format requires the use of numbers. But here is a small problem. This problem is that there is no match between the numbers and the functions they represent. However, this problem can be solved if a small user manual is provided to the user. As a further solution, a feature may be developed under the name of aid tab (Peevers, Douglas & Jack, 2007).

Second SMS banking format, are abbreviations. The abbreviations also have some hendikaps as they are in the input format. Finally, the freeform form is more advantageous. Because the customers here can create SMS requests in their own words. This does not require the user to memorize numbers or learn abbreviations, and ends up worrying about this (Peevers, Douglas & Jack, 2007).

Handling SMS, banks can proffer different services induced by the client dispatching a message to the client service centre and getting messages to their phone. By data entry via the phone keyboard, clients can ordinary (Barnes & Corbitt, 2003):

- Control the arrears of their calculus
- Control the status of a check number
- Transpose money from one account to another
- See the last operations made (usually three to five)
- Claim an operation declaration
- Claim a check book
- Exchange a code
- Fee a beneficial bill (usually use for more improved mobile banks).

2.2.2 WAP banking

WAP is the standard used to get Internet-based themes and to develop valuable services for wireless devices like telephones, personal digital assistants. WAP sites work with hypertext transfer protocol (HTTP) because this protocol provides seamless integration with the web. WAP sites use extensible markup language (XML) -based and wireless sign language (WML), as opposed to websites that are encoded using hypertext markup language (HTML) (Barnes & Corbitt, 2003).

WAP banking has improved as electronic payment systems become more secure. In the banking sector, products and services are offered not in branches but in electronic environment, which makes the use of WAP technologies compulsory. For this reason, banks may increase their income streams and flexibility if they encourage the use of WAP technology (Ratten, 2008).

In the WAP service, there are some transactions for the customer to carry out mobile banking activities. These operations can be listed as follows (Barnes & Corbitt, 2003):

- Control the arrears of their account

- Transaction enquiry

- Seeing the last operations made (usually three or five)

- Controlling the condition of a check number

- Flowing money from one account to another (usually use for more improved mobile banks)

- Claim a transaction declaration

- Claim a check book

- Revocating a service demand

- Controlling the condition of service demands

- Switching a cod

- Disbursing a beneficial bill or credit card (usually only for more advanced m-banks)

- Providing calculus knowledge, e.g. interest rate

- Providing product knowledge

- Investigating a branch list.

2.3 Advantages and Disadvantages of Mobile Banking

Banks proffer many advantages to mobile banking customers in order to retain their customers. There are no transaction costs in mobile banking. Examples of this include rent, operation, cleanliness, and the electricity costs. In addition, if you are using mobile banking application, you will not be charged for the account operation fee and you will receive lower interest rates on the loans received. Another advantage of mobile banking is that the transactions are carried out without going to the branch and it also offers the opportunity to perform transactions 24/7, not only within certain hours. The advantages of mobile banking are undoubtedly more than traditional banking (Yavuz, 2017).

Some of the benefits that mobile banking provides to its customers can be summarized as follows (Chandran, 2014):

- Time-saving: You have to be in the branch in a certain time zone to be able to trade in traditional banking. However, in mobile banking, accounts can be

checked even while on the move, flow funds can be received or accounts can be promoted. This will save you a great deal of time.

- Convenient: Mobile banking allows the banking operations to be carried out at the appropriate time and place, rather than waiting on the queue.

- Secure: Mobile banking has an advantage over internet banking. This is done by sending an SMS verification key to the customer's phone to ensure security.

- Easily reach to your financies: You can access your financial information at any time without having to call the bank.

- Increased productivity: A decrease in the number of people coming to the banking branches is a factor that increases the productivity, at the same time, the applications such as paper used are reduced.

- Fraud reduction: Mobile banking, providing a huge benefit in terms of empowerment for customers to check the accounts.

- Access to mobile banking can be provided by using the networks of telecom operators. This, in turn, removes the necessity of having a WIFI connection everywhere.

- You can control your remaining deposits, make money transfer and so on.

Mobile banking has some negative aspects for the customer. These are (Chandran, 2014):

- Mobile banking customers are at risk because of dangerous SMS hackers and fraudsters.

- If the phone or other mobile banking tools are accessible by criminals, the mobile banking pin code and other critical information can be reached.

- There are a large number of mobile banking customers, but there is no important operating system to support it so the way for hackers opens.

- Most mobile banking applications require a wifi connection to work, so if you live in a rural area, it may be difficult for you to take advantage of it. The same thing can happen when your phone is out of charge.

- Many smartphones do not have antivirus programs, and even most mobile phones are not compatible with antivirus programs. This suggests that there is a lack of security by experts.

- When mobile banking transactions are being carried out, the banks do not offer the same level of protection to their customers. This poses a risk to the customer.

2.4 Mobile Banking In Turkey

For the first time in 2005, Garanti Bank which started to provide SMS banking and mobile banking services enabled the transfer of foreign currency from the mobile phone. Then İş Bank switched to mobile banking applications. In order for the mobile banking application to work, the measurements of the mobile phone monitor must be 128 * 60 and the mobile phone must be activated by java. In addition, the wireless application protocols (WAP) and general packet radio service (GPRS) settings must be installed for both banks. Many financial transactions have been realized with Garanti and İşbank mobile banking applications. These transactions are mainly money transfer, credit card transactions, balance control and invesment transactions (Çakıcı, 2008).

Mobile banking applications have gained speed and development in our country. Garanti Bank using the SMS banking, passed in 2007 to the WAP technology. Then akbank developed the mobile banking application in 2008. Mobile banking also led to increased competition among the banks. In 2008, TEB launched its mobile banking application for iPhones. This was followed by Garanti Bank. İşbank also introduced the iPhone application (Kurt & Turan, 2017).

Mobile banking users are increasing day by day and is rapidly developing mobile banking applications in Turkey. For this reason, customer behaviors also change in banking applications. According to the ING survey, customers pay less cash. Instead, they prefer to pay by bank or credit card, send funds through SMS, send money via SMS, and use contactless payment systems. In addition, the Turkish financial sector has the purpose of creating a 'cashless society' until 2023. Undoubtedly the technological developments in the payment system can be mentioned in the formation of this thinking. Contactless payment systems and digital wallets have shed light on this idea. Online shopping and money transfer transactions can be done with digital wallets such as credit card, bank card, loyalty card. Digital wallets are one of the best elements of the idea of a cashless society because it does not require cash flow beside the person (Özdemir, 2014).

Payment systems such as Turkcell wallet, BKM express and Paypal are important for cashless community thinking. Turkcell wallet also includes NFC technology that provides contactless payment. While serving this service, Turkcell started to work with Garanti Bank which is the leader in the sector. With this cooperation, Garanti Bank has been able to make contactless payments by using credit card and NFC technology. In addition, until 2013, Turkcell worked with other banks such as Yapikredi Akbank. This shows that the cooperation of telecom companies and banks both contribute to the idea of a cashless society and to the development of mobile banking (Özdemir, 2014).

As of September 2017, the total amount of clients signed up in the system for mobile banking and having made at least one entry transaction is 40 million 681 thousand persons. Of these, 26 million 536 thousand persons (65 percent) entered at least once during July-September 2017 period. The amount of mobile banking customers who entered at least once during the last year is 32 million 926 thousand (Türkiye Bankalar Birliği, 2017).

3 SERVICE AND QUALITY CONCEPTS

3.1 Service Concept

Service can be defined as a benefit or event brought to another by a group that does not appear in the possession of anything. The results of the service may be physical or non-physical. Another definition could position the service as a benefit obtained by the introduction of products. Services can be discussed in 3 different dimensions (Sevimli, 2006):

1. Benefits offered for sale, regardless of the value of the goods and services, are: (insurance and lawyer).
2. Events that require the use of goods (entertainment, transportation)
3. Actions taken with goods or other services (Credit sale)

Services are separated from products because they are intangible. But without the services it is impossible to reach the products to its customers. As an example, a person may encounter its intangible characteristics when purchasing a material product. On the other hand, many services include material assets. For example, when the banks provide a service, the seats here are tangible (Çiftçi, 2006).

When people buy a product they feel like having it, but they get experience when they buy a service. For example, if a person buy a car from a store, the person leaves the store with car. But if a person buys a service, he or she will leave with experience from store (Çiftçi, 2006).

In short, services are non-standardized and intangible processes designed to meet the various needs of people. Considering structure of the services can be summarized as follows (Sevimli, 2006):

- With some exceptions, services do not have measurable characteristics. While products or product sizes can be measured, this is not the case in services. For this reason, the services have dynamic characteristics, not static.

- Services do not have stocking features like products. Because services must be consumed from the moment they are given. At the same time, the same service can not be resubmitted, although the services are repeatable.

- Services have an inexplicable feature, but they can be examined as a result of some observational studies. These studies can be done with environmental standards and performance standards, physical products and physical conditions integrated into services.

- The quality value perceived from the services can be obtained by first purchasing the service, so we can not talk about the quality of the service before the service is bought.

- The services are created and the created service is offered to the customer, which means that the services have no lifetime.

- When a service is purchased, this service is offered to the customer at a certain time interval. For this reason, services have a time dimension.

- Services are presented based on people's performance, not on objects. For this reason, the human factor in services has a great deal of precaution and influence.

- Services are determined according to needs. It is possible to define needs in two parts. The first of these is services such as water and electricity, which are constantly needed. Secondly, services such as doctor appointments, banks, which are scheduled.

3.1.1 Features of service

Intangibility; services are not somatic. Services are performance or movements which are invisible, inviolable, imperceptible. When you buy a service, in general there is no tangible thing which represent the service. For example, health services occur from inspection, diagnosis and treatment. Even the treatment and diagnosis are completed, patient can not be able to understand the service fulfilled. This is a consequence of the lack of immunity or physical presence of services. (Akdoğan, 2011).

The benefit of service is based on experience. Customer can evaluate value and quality of services after purchasing service or consuming service. When the consumer purchase a service, he/she utilizes from their past experience. (Aydın & Sayım, 2011).

Concurrent Production and Consumption; many goods are produced at first, stock for a while and consume later. On the other hand services are produced and consumed at the same time. The client is at the presentation when the service is offered. In addition to this the client can take part in production process of service. In this way the client guides the service with their experiences (Akdoğan, 2011).

In the process of production of the service, the clients interacts with each other and influence their experiences. As a result of simultaneous production and consumption, service providers see themselves as a part of the product and an important input of the customer's service experience. Because services are produced and consumed at the same time mass production is not imposible but it is difficult. Usually achieve significant economies of scale through centralization is difficult too. In terms of marketing the principle of concurrent production and consumption makes the direct sale in services often the only possible distribution channel, and a service can not be sold in more than one market. This feature also limits the volume of activities given by an enterprise. For example, the amount of car a repairmen can repair in a day or the number of patients a doctor can examine is limited (Akdoğan, 2011).

Heterogeneity; variability or heterogeneity is an important feature that explains the lack of standardization of services. Particularly in labor-intensive services, it is difficult to achieve uniform output because services are performance produced by people. It is almost impossible to standardize the services that different people give to different customers at different times. The level of human participation in production is directly related to the standardization of service production. As the level of human participation increases, it becomes more difficult to obtain homogeneity (Akdoğan, 2011).

The heterogeneity of services means they are not alike. Due to these features, standardizing services is rare but not impossible. In other words, the quality and contents of the services can vary from one service to another, even from day to day. For this reason, it is crucial to control the quality of the service and to solve its continuity and performance in advance. The essence and priorities of the service can only be reflected by the personal talent and capacity of the person who produces it. Because the presentation of services is provided by people. The staff who provide the service will offer different services according to the motivation, morale and attitude of the day (Akdoğan, 2011).

Changeable Demand; demand of service is relatively variable and unclear. This demand can change with seasons, years and months. In addition to this the demand can change with day to day or hour to hour. For this reason, it is impossible to equalize the number of services that can be provided in terms of companies and the number of

services requested. In some cases, demand increases while services are inadequate or, conversely, economic losses can occur due to inadequate demand for services. It is impossible to determine the production capacity of services due to the changing demand. In addition, productivity and performance evaluations are becoming more difficult (Sevimli, 2006).

Labor and Relationship-Density; providing organizational efficiency in many service operations is based on the labor factor. This means that the human element, which is the main component of the labor factor, determines quality and performance in labor intensive and intensive services. In such service enterprises, deficiencies can not be solved with equipment, training and knowledge of human factor need to be increased in order to overcome deficiencies. Services require face-to-face contact, close relationship with the service provider and the customer. In other words, services are a relationship with people. Therefore, the human element in the service sector is indispensable and the most important influence (Aydın & Sayım, 2011).

3.2 Quality

The concept of quality passed on to our language in latin. This concept, known as 'qualis' in Latin, has been passed on to Turkish as quality. Qualis means 'how it is formed' in Turkish. According to this definition, quality defines what product is used, how a product is made. Today, however, the concept of quality represents superiority and goodness. Therefore, quality is subjective. Subjectivity differs from person to person. These differences depend on the level of education of the persons, their level of life, their taste, their traditions and social structures. In addition, the expectations of people living in different cultures will be different from each other. Therefore, a given service may meet the expectations of some people, while others may not. In other words, the quality of a product may be better than the quality of another product. Production should be carried out considering different expectations. For this reason, there is a subjective aspect of quality. If quality standards and legislation are set, then quality becomes measurable and the objective aspect of the qualification arises (Akdoğan, 2011).

Quality has an indefinite structure, so people can not easily explain concepts such as goodness, luxury, brightness or weight (Parasuraman, Zeithaml & Berry, 1985).

The most common definitions of quality concept are listed below (Toraman, 2011);

- Quality is the value of a product or service.
- Quality is assessed as conformity with predetermined procedures.
- Quality corresponds the needs.
- Quality, availability for use.
- Quality is to block deficiency.
- Quality is to correspond or surpass client expectations.
- Quality is the products and services that will consistently meet customer expectations and demands.

In general terms, quality can be defined as the level of compatibility (Çiftçi, 2006).

From a common point of view, quality can be defined as the level of perfection. If we are to provide a common definition of quality, it is the element that could give response to demand for a product or service quality. For the purpose of improve the quality of the goods or services needed to meet the demands of the consumers, such factors as management quality, human quality, quality of the work done need to be improved (Akın, 2007).

Quality consists of two components as design and conformity. Design quality is the goods and services needed to meet customer needs. Conformity quality can be defined as the suitability of the manufactured goods or service provided to the design quality. If there is a difference between design quality and conformity quality, it is seen that there are mistakes or reprocessing here. Today, businesses are more focused on design quality. Businesses are struggling to catch zero errors in design quality to ensure quality in production (Toraman, 2010).

3.2.1 Dimensions of quality

In order to embody the concept of service quality, it is important to investigate the dimensions of service quality. An increase in the quality of service may be considered to be a component of the quality increases that will occur in various dimensions of service. There are many studies attempting to explain the dimensions of service quality. Sasser, Olsen and Wyckoff (1978) have described service dimension

with three components. These are the level of materials, facilities and personnel. In other words, they underlined that service quality includes more than service as a result, the importance of the way of reaching the service (Zengin & Erdal, 2000).

Technological progress played a major role in the rapid development of the service sector. Other factor that is influential in the development of the sector is the fact that its service activities are in close relation with many areas that constitute the GNP. In other words, nowadays it is difficult to find an area that does not interact with the lower branches that constitute the service sector, especially tourism, telecommunication and finance. In the service sector, the service producers try to create differences in the quality of service they provide, in order to provide consumer satisfaction and increase their share in both national and international markets, such as service producing enterprises, goods producing enterprises (Zengin & Erdal, 2000).

There are many definitions of quality, which is why it has a multi-dimensional structure. The dimensions of the qualities are as follows (Çiftçi, 2006):

- Reliability: Reliably fulfilling customer needs and requirements.
- Performance: The best method to execute the function of the product.
- Relevance: Specifications and documentation conform to standards.
- Durability: The suitable life is long.
- Serviceability: When a product complaint is received, repair or maintenance of the product during the warranty period.
- Aesthetic: The ability of the product to appeal to the senses and pleasures.
- Service Fulfillment: It refers to easy resolution of problems and complaints.
- Reputation: Past performance of product or other production items.

3.3 Service Quality

Quality has features such as meeting customer needs, improving operational efficiency and reducing costs. This allows businesses to see quality as a strategic tool in the production of goods and services. Measuring quality in the service sector is more difficult than in other sectors. In order to be able to measure quality in the service sector, a perfect and complete service network has to be established between customer satisfaction and customer expectations and needs (Murat & Çelik, 2007).

With the rapid growth of the service sector, people have become more sensitive to quality and the concept of quality has gained great importance for companies with the effect of increasing competition. Businesses aim to attract more customers and reduce labor costs by increasing quality of services (Öncü, Kutukız & Koçoğlu, 2010).

There are three distinct definitions of service quality concept. The quality of service is the difference between the customer's expectations and the actual performance of the service provided (Çiftçi, 2006).

The second definition of service quality includes the definition of terms such as customer, service, quality and levels. The customer is who uses the service and who pays for it. Service is defined as a basic or complementary activity that does not produce physical output. Quality is the tangible and intangible characteristics of a product or service that is superior to the competition, perceived by the customer. Levels, on the other hand, are measurement systems that measure, direct and evaluate service quality levels in terms of the customer (Ataberk, 2007).

The third definition of service quality describes the gaps leading to inaccuracies in determining and managing excellent service quality (Çiftçi, 2006). The first gap is caused by the distinction between customer expectations and perceptions of business management (Öncü, Kutukız & Koçoğlu, 2010). The second gap may not translate business management into service standards, even though customer perceptions have been correctly perceived (Sevimli, 2006). The third gap stems from the differences between the quality of service specifications and the service provided by the employees to the customers (Öncü, Kutukız & Koçoğlu, 2010). The fourth space is the distinction between the service advertised in the media and the service provided to the customer (Öncü, Kutukız & Koçoğlu, 2010). The fifth gap is caused by the difference between the expected service and the perceived service. This difference is the result of four distinctions that affect the quality perceptions of the client in business (Yumuşak, 2006).

There are some other several definitions of service quality (Zengin & Erdal, 2000):

- Quality of Service ensures that the performances of the mechanisms are accurate.
- Quality of Service is that people perform their performances without error.

- Service Quality is the purchase of perfect products.
- Service Quality is correct diagnosis.
- Quality of Service is the precise measure.
- Quality of Service is the elimination of problems.
- Service Quality is to be reliable.
- Service Quality is to realize effective performance.
- Service quality is to be polite.
- Service Quality shows safe performance.
- Service Quality is timely.

3.3.1 Technical quality and functional quality

Technical quality is the fulfillment of customer's service needs. For example; the quality of output can be assessed as a bus operation promises to deliver the passengers where they will go or to provide accommodation for the customers on time and on terms promised by an accommodation operatör (Çelik, 2009).

The net audit results of a service production process correspond to the technical performance of the service. These technical results obtained by the client as a consequence of mutual communication with the service operation are critical in evaluating the service quality of the consumer. This evaluation can be called the technical dimension of the service (Sürmeli, 2002).

In general, the technical dimension of a service can be measured objectively like a technical extent of a output. However, since the services are produced in a mutual effect with the consumer, this technical quality extent is not sufficient for the total quality perceived by the client. The client will also be affected by how this technical qualification is transposed functionally. How does the employee of the service management perform his / her duties? How does the employee behave and how does she/he speak? This and all other similar questions will affect how the customer perceives the service. In addition, factors such as the behavior of other customers in this service firms, buyer-seller interactions will also affect the customer's view of service (Sürmeli, 2002).

Functional quality (process quality) is how the basic service is performed and evaluated by the customer. This dimension of quality is firstly termed as transaction quality, emphasized by Lehtinen and Lehtinen, and is defined as the degree to which the

customer participates in the service process and the level of service performance of the staff. In transport services, which are particularly concerned with health, counseling and research, where customers' contact is high, customers are involved both as consumers and as production assistants in the service process. The studies show that as a production assistant, the inclusion of the customer's knowledge, time, interest and effort into the service process significantly affects the quality of service output (Çelik, 2009).

3.3.2 Perceived quality and expected quality

Because services are intangible, it can be difficult for customers to assess service quality before purchasing. In this sense, quality also depends on the equality of effort perceived by the client or the equality of satisfaction of the client with the service. For this reason, the term "perceived service quality" is used instead of service quality (Kazançoğlu, 2011).

The client's perceptions of service quality come to the conclusion that they compare the experience before they received the service and the experience after they perceived the actual service. If the anticipations are met, "satisfaction" will be given, and if not, "dissatisfaction" will be the issue. The perceived quality is different from the objective quality. The result is the perceived quality, customer perceived performance and anticipation comparisons (Çiftçi, 2006).

There is a conceptual difference between objective quality and perceived quality. Objective quality covers the objective content and characteristics of any object or event; the perceived quality, subjective evaluations of the persons involved. So perceived quality is quite a matter, with differences between judgments (Sürmeli, 2002).

The relationship between expected service and perceived service can be explained as follows (Ataberk, 2007):

- If the expected service more than perceived service, the perceived quality is far from pleasure and an inadmissible quality level will be created.
- If the expected service equal to perceived service, the perceived quality will be pleasure.
- If the expected service less than perceived service, perceived quality will be higher than satisfactory and the ideal level of quality will occur.

3.4 Service Quality Measurement Models

In literature there are many research about measurement model of service quality.

3.4.1 Gronroos' service quality model

Gronroos argued that a clear picture of what customers on the market really are seeking and how service firms are evaluating customer relationships should be achieved so that service quality models and service management models can be built. In addition, in its publications on service marketing until that day, it stated that research reports, scientific articles and books do not have a model of how consumers perceive service quality. From this point of view, in 1984, the literature and service marketing literature introduced the first service quality model which examines how consumers perceive service quality (Kitapçı, Yıldırım & Çömlek, 2011).

As a starting point, Gronroos has taken the question of how consumers perceive the quality of service when they form their own service quality model. He thus stated that the answer to this question would uncover the quality of service components and that the service-oriented concepts and models to be created would yield more successful results. Indeed, when the quality of service literature is examined in depth, we often observe that the ideas of Grönroos and the model he has created often lead him to be a starting point for researchers in this regard (Kitapçı, Yıldırım & Çömlek, 2011).

If a firm wanted to be successful, it was critical for business to discover the client's perception of the service proffered. Service quality management means that making perceived quality equal to expected quality and keeping this length as little as possible for access to satisfaction of customer. Gronroos proposed three aspects of service quality. The first aspect is technical, refers to what client receive as a consequence of communicating with a service provider. The other ingredient is functional, refers to how a technical service is gotten by the client. Process of service is very important in evaluation of customer of the service quality. In addition to this, as a consequence of service that customer receive depends on their wishes and the service taking process affects the evaluation of the customers and the appearance of the service. We can obtain perceived quality of service by contrasting expected quality and received quality. The third aspect of service quality in this model is corporate image. The anticipation of customers affected by their views of the firms and it is the consequence

of how clients perceived enterprises' services. For this reason the image is created by functional and technical quality. Traditional marketing activities such as advertising, pricing and word of mouth applications are less important factors for the corporate image. (Ghotbabadi, Feiz & Baharun, 2015). In Figure 3.1 the Groonros model is shown.

Figure 3.1 The Gronroos model

Source: Ghotbabadi, Feiz & Baharun, 2015, s.272

3.4.2 Lehtinen & Lehtinen's service quality model

The main bearing of Lehtinen and Lehtinen (1982) is the production of service quality in the communication between a client and the elements of the service enterprise. They use three quality dimensions which are physical quality, corporate quality and interactive quality. Physical quality is the physical dimensions of the service (eg, equipment or building). Corporate quality, is corporate image or profile. Interactive quality is resulting from interaction between communication staff and clients as well as interaction between some customers and other customers. (Parasuraman, Zeithaml & Berry, 1985).

Lehtinen and Lehtinen also point out that quality may be more beneficial in some cases when the client is more clearly a two-dimensional phenomenon. According to researchers, the "two-dimensional quality approach" is parallel to the roughly three-dimensional approach, but it is a more intangible approach and quality is different in terms of "process" and "output" quality. Process Quality is the quality assessed by the

client during the acquisition of the service. Output quality is evaluated by the customer after the service is fulfilled. Lehtinen also emphasizes the importance of process quality and the way in which customers outside the enterprise participate in the service and the relationships between them and the staff during service production. In this model, the researchers handled the service process and service output supported by the qualification separately. The main arguments of Lehtinen and Lehtinen about service quality are the interaction between the quality of service, the elements of the service organization and the customer (Yumuşak, 2006).

According to Lehtinen and Lehtinen, the quality of output is the assessment of the concrete and abstract benefits that the customer has achieved at the end of the service process. For example; a passenger of a bus company wants to go safely and on time, or to prevent water loss by changing the plumbing of a plumber, expressing the concrete service benefits created for the physical condition or assets of the customer, or having a positive attitude towards the hair, Changes can be given as an example of the abstract service benefit obtained. The quality of concrete service outputs is the emotional part of the service experience that can only be assessed by the customer, while the abstract service outputs can be evaluated directly or by consulting others' ideas (Çelik, 2009).

3.4.3 SERVQUAL model

Parasuraman, Zeithaml and Berry suggests a different function as well as between the expectation and perceived quality dimensions of service quality. They have improved a service quality model based on gap analysis. Different gaps are displayed in the model (Akdoğan, 2011):

Gap 1: Customer expectations, management as well as not knowing customer expectations between perceptions.

Gap 2: Differences between perceptions of quality attributes, such as management's client expectations and inadequate service quality standards.

Gap 3: Differences between qualities of service quality (parts of requirements, parts of specification) and actual service, for example; lack of service performance.

Gap 4: Differences as to whether the promises between service delivery and communication with the customer about service delivery overlap with the presentation.

Gap 5: The distinction between the client's expectations and the service received. This gap is based on the dimension and direction of the four gaps that are identified by the marketer with the presentation of service quality.

In Figure 3.2 GAP analysis model is shown.
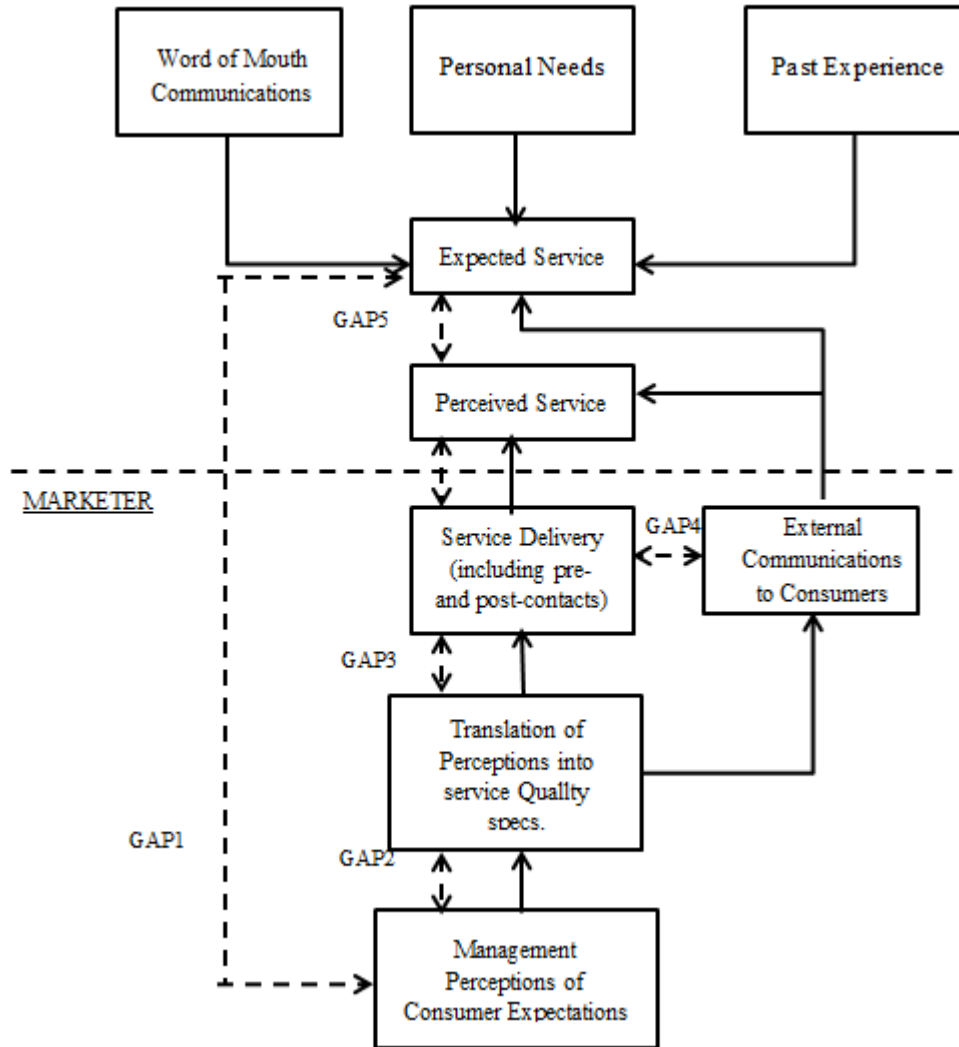
Figure 3.2 Gap analysis model

Source: Parasuraman, Zeithaml & Berry, 1985, s.44

At the beginning of his research Parasuraman and his colleagues examined the works of scientists who were interested in this subject and brought various interpretations. However, they have found that these works do not provide sufficient explanation for the quality of service. Many questions remain unanswered. For example; How is the quality of service perceived by customers? Are customers

assessing the specific dimensions of service? What are these dimensions? What are the factors that affect customer expectations and perceptions (Yumuşak, 2006,) ?

Parasuraman and his colleagues, who tried to find answers to these questions, have made "in-depth interviews" and "group discussions" which are among the exploratory research types and also included in the qualitative researches. Four categories of service were selected for the research. These are banking, credit cards, securities brokerage and repair and maintenance services. With the help of these selected service categories, they have tried to bring together many features of the service sector, thus making the points that might apply to each type of service. While banking and credit card services can be performed in a shorter time, brokerage and repair and maintenance services are taking longer time. Repair and maintenance services are related to the tangible assets of the consumer, while the other three services involve intangible assets. Interaction with customers is higher in banking and brokerage (Yumuşak, 2006).

For in-depth interviews, one firm was identified to symbolized each of the four service classes, and each of these firms was interviewed by three or four executives. Managers have been chosen from the marketing, operations, senior management and customer relations departments, which can influence the quality of service of firms. As a consequence, with fourteen service companies, fourteen managers (Çiftçi, 2006):

- What they perceive as a service quality from the client's point of view

- What they have done to check or develop service quality

- Discussing what the problem they encountered when delivering high-quality service

A sum of "12 consumer focus group meetings" were executed for the four types of services identified. These groups were asked about the reasons for their satisfaction or dissatisfaction, the definition of the ideal service, the significance of the service quality, the performance anticipations about the service, and the role of the price in the service quality (Çiftçi, 2006)

As a result of these qualitative researches, in terms of the customers, they obtained important information about the description of service quality, factors affecting service expectations and dimensions of service quality. Parasuraman and his colleagues described service quality as "the difference between customers' desires and

anticipations". As a result of these studies, Parasuraman, Zeithaml and Berry have identified 10 dimensions as in figure 3.3 (Yumuşak, 2006).
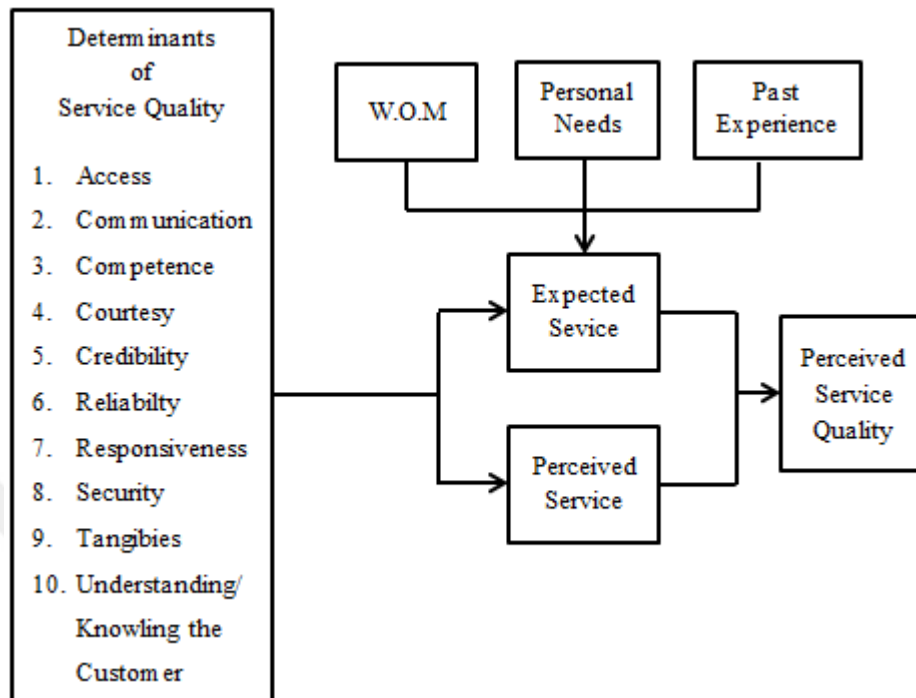
Figure 3.3 Determinants of service quality

Source: Parasuraman, Zeithaml & Berry,1985, s.48

However, as a consequence of the research, Parasuraman and his colleagues evaluated the questionnaires they applied by factor analysis and improved a questionnaire that is a service quality measurement device named Servqual by decreasing the ten dimensions determining service quality to five dimensions (Sevimli, 2006). These five dimensions are (Yumuşak, 2006);

- Tangibles: Physical possibilities, equipment, personnel appearance.
- Reliability: Careful and reliable service to the promised service.
- Responsiveness: The desire to help clients and give the service fast.
- Assurance: The level of information and respect of workers must be confidential and trustworthy.
- Empathy: Individual attention and self-expression to customers.

Servqual measures service quality numerically by means of surveys based on the definition of service quality given above and five dimensions. In the three-part questionnaire, 22 propositions in the first section are used to measure the client's overall expectations of service and 22 in the third part of the questionnaire to determine how

customers perceive the services provided by the company. The second dimension aims to determine the weights of quality dimensions. The same numbered proposals in the questionnaires consist of exactly the same words except their subjects. In the survey used in this research, the first section's proposals start with "Excellent banks ..." while the third section's proposals start with "Ziraat Bank ..." (Çiftçi, 2006).

In figure 3.4 the SERVQUAL model dimensions are shown.
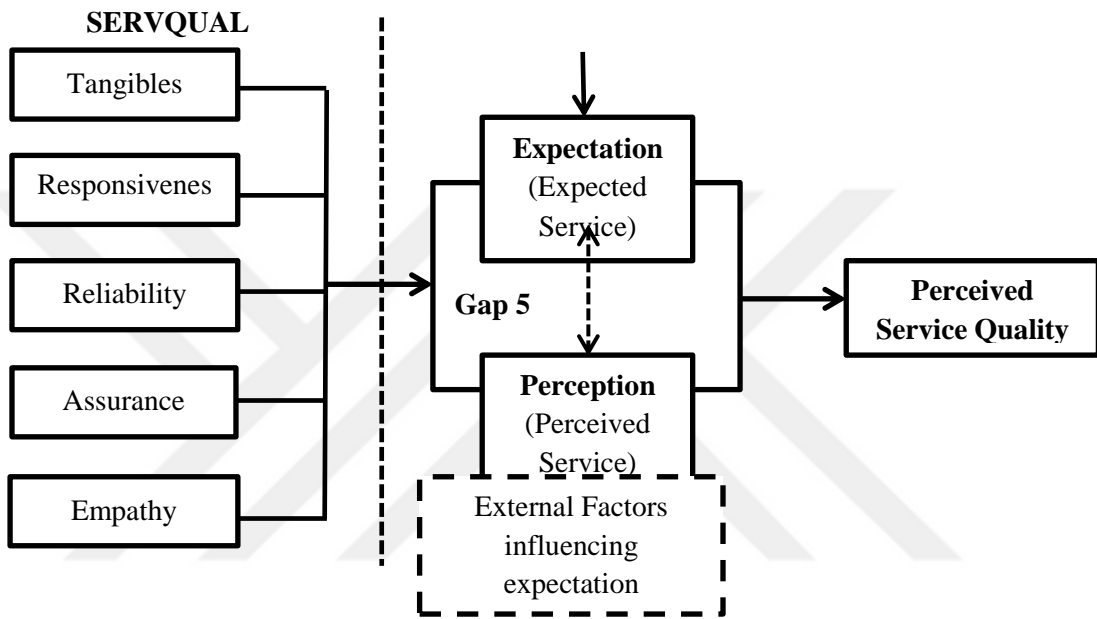
Figure 3.4 Servqual model dimensions

Source: Daniel & Berinyuy, 2010, s.43

3.4.4 Servperf quality model

When no service provision has been made in advance (no experience is available), the expectations define the level of service quality that is perceived. After first experience with the service provider, the impact on the customer will affect the perception of service quality of the second experience. As experience increases in this way, the customer's perception of service quality continues to have an impact on the perception of service quality that it has created in its previous experience. If the impact of customer experience is perceived as customer satisfaction related to the experience, the quality of customer service perceptions can be shaped in the long term depending on the service delivery. In the SERVPERF model, it has been suggested that the quality of service should be modeled only with performance perception (İkiz, 2010).

In 1992, Cronin and Taylor considered performance as the only factor to evaluate for service quality. They have developed a refined model for this. They argued consumer behavior as the only element in measuring perceived quality of service, and argued that service performance, the perceived service, is the only source of measurement for service quality. They believe that the relationship between consumer satisfaction and purchase intent and service quality should be investigated. They believe that service quality is an important element of consumer satisfaction. In contrast to the expected quality and perceived quality elements in the SERVQUAL model, they have defined performance as perceived quality as the only measurement element. In this new model, they continued to measure performance with five different dimensions in the SERVQUAL model. These dimensions are reliability, responsiveness, assurance, tangibles and empathy. (Ghotbabadi, Feiz & Baharun, 2015).

The Servperf scale, apart from the SERVQUAL, has tried to remove the expectation and perception problems. In this performance-based model, it is argued that purchasing intentions stem from customer satisfaction rather than service quality. Servperf scale equals service quality to performance. Servperf implementers get information about performance by asking simple questions about their customers (Türk, 2009).

3.4.5 Haywood Farmer service quality model

In the Haywood-Farmer model, it is specified that the service quality will be ensured by the continuous satisfaction of the preferences and expectations of the customers. The first step is seen as the grouping of qualifications that affect service quality and these qualifications are addressed in three main groups (İkiz, 2010):

- Physical elements, processes and procedures
- Behavior and sincerity of people
- Professional judgment

The expectation from the management is to determine the location of the firm on the range shown between these three groups. The following three operational cases need to be considered for positioning (İkiz, 2010):

- The degree of personalization of the service
- How labor-intensive is the service

- How open the relationship or interaction is

In this model, Haywood-Farmer tries to determine the types of service environments that arise in relation to the degree of contact and communication, the intensity of work. For instance, services that have low values in terms of business intensity and customer relationship arrangements are closer to the model's physical ability and process attributes. For this reason, according to the model, special care must be given to ensure that the equipment is reliable and easy to use for the customer (Akdoğan, 2011).

Although the model does not show a detailed implementation procedure to reveal service quality problems or improve service quality, it has established some implications that affect qualitative and operational factors (İkiz, 2010).

3.4.6 Brogowicz, Delene and Lyth (1990) synthesized service quality model

A service quality gap according to the model is when the customer does not yet experience the service, but learns by mouth from communication, advertising or other media. It is therefore necessary to combine the perceptions of potential customers with the perceived quality of service as well as the perceived quality of service experience of real customers (Akdoğan, 2011). According to Service Quality Synthesis Model; through the use of verbal communication, advertising or other media, the quality of service can occur even if the customer has not yet experienced the service (Kayral, 2012).

It defines key variables such as planning, implementation and control that should be systematically considered by the management. Differences in service quality can be minimized. Experimental validity is required (Kılıç & Eleren, 2009). Synthesized service quality model considers three factors (Akdoğan, 2011):

- Corporate Image
- External İnfluences
- Traditional marketing activities

The model presented by Brogowicz et al. tries to integrate traditional management structure, service design, operations and marketing activities. The aim of the model is to determine dimensions related to quality of service in planning, implementation and control in traditional management approach (Kayral, 2012).

3.4.7   Mattsson (1992) ideal value in service quality model

The model suggests the comparison of experiences with the use of the expected ideal standards (Kılıç & Eleren, 2009). The model defends the value approach to service quality and models it as a consequence of the satisfaction process (Akdoğan, 2011). Mattsson (1992), modeling the service quality model based on the ideal value standard, has modeled the output of the customer satisfaction process and compared the data obtained with the ideal standards and experience. First of all, a random sample from among the customers is required to list what the ideal hotel values might be. According to customers; factors such as a pleasant interior design, a good atmosphere, superb hospitality, value to customers, a quick work plan, appropriate behaviors of personnel, and understandable information are listed as ideal hotel values. Then, as long as the customers departing from the hotel stay at the hotel, they are found to have the satisfaction ratings of the ideal hotel. (Murat & Çelik, 2007).

The factors that are important in the research are emphasized and factors are the communication of the hotel is incomprehensible, the hotel has always done the same way, the hotel can not meet the needs of the guests, the business is bad at the hotel, the employees are never happy to see their work and they are not satisfied with the personality and atmosphere of the hotel. The value-based model that emerges as a result of the study suggests a comparison of perceived ideal standards and experiences, and the difference between ideal standards and experience is the determinant of customer satisfaction. (Kayral, 2012).

3.4.8   Berkley and Gupta (1994) information technology compliance model

Investments made in information technology (IT) advocate the intention of improving the productivity of the activity in general, giving the customer very small care to the service offered and long-term client activity. This model links the strategies of the service and the organization. Information technology is used to improve service quality through a number of case studies in various sectors. This model is detailed; it can also be used to develop specific service quality extents including where information technology is used or reliability, sensitivity, competence, access, communication, security, customer recognition and understanding. The use of information technology for quality control is also discussed through some studies (Akdoğan, 2011).

It describes how information technology can be used to develop client service across key service quality extents. The model only shows the influence of information

technology on service quality. It does not provide evaluation paths (Kılıç & Eleren, 2009).

3.4.9 Spreng and Mackoy (1996) perceived quality of service and satisfaction model

This model seeks to facilitate understanding of customer satisfaction and perceived service quality. The model expectation, the perceived performance desires and the desired trend underline the overall service quality and customer satisfaction. These are measured by 10 recommendations: Appropriateness of appointment, closeness of personnel, consultant listening to questions, consultant providing correct information, consultant's knowledge, consistent advice, consultant helping in long term planning, consultant helping in choosing the right job and career, personal life are concerned and staff Professional (Akdoğan, 2011).

The model emphasizes the effect of anticipatory service quality on customer satisfaction and the effect on customer satisfaction and quality of service, which is incompatible with expectancy (Kayral, 2012).

3.4.10 Sweeney, Soutar and Johnson (1997) retail service quality and perceived value model

The value structure used in this model is "value for money". Model 1: This model underlines that with product quality, price, functional and technical service quality perceptions directly affect value perception. Model 2: This model underlines functional service quality perceptions as well as customers' requests directly affecting the purchase. Although functional and technical service quality perceptions do not directly affect value perceptions, product quality perceptions are indirectly affected. However, the decisive factor here is that the degree to which the customer is willing to buy products or services is first-degree effect (Akdoğan,2011).

3.5 E-Service Quality And Measurement

There are some models that measure e-service quality.

3.5.1 E-service quality

With the emergence of the concept of e-commerce, service operators have started to carry out commercial activities in electronic environment. Along with the adoption of the e-service that emerged during this process, it is becoming more and more important that the quality of the service provided in the electronic environment is

at the same level. The diversification of services and the increase in the number of service enterprises have made the importance of producing quality services important. Quality service understanding is also important in electronic services. However, in order to provide quality service in these environments, it is necessary for businesses to determine how customers perceive the service provided, what issues customers are paying attention to, and develop strategies for this. It is also known that e-service customers are also expected to know how the service is delivered as much as the result of the service provided. These expectations also indicate that only quality product offerings are not enough and that the quality of service that customers can expect to respond to is different (Bayram & Şahbaz, 2017).

The concept of electronic service (e-service) has occured as a consequence of using the internet as a self-service technology and realizing service delivery over the Internet. In this context, e-service is a process that is the consequence of interaction between the customer and the website of the service operation, without the participation of a service person directly (Çelik, 2015). In other words, e-service covers the entire range of services spread across a wide range between pure product sales, which are distributed in virtual markets using the internet, with few service elements, and pure services, which are provided free of charge under the service contract (Çelik, 2015).

E-Service quality is described widely to cover whole stages of a client's coactions with a web site: the dimension to which a web site makes easy efficient and effective trading, buying and delivery (Parasuraman, Zeithaml & Malhotra, 2005).

3.5.2 E-service quality measurement studies

- WebQual Scale (Loiacono et al. 2002): One of the empirical studies focused on website quality is Loiacono and colleagues (2000) performed WebQual measures. This scale from the 36 questions focused on the web site interface and customer satisfaction, ignoring the buying behavior and the direct service quality (Güllülü, Uçan & Karabulut, 2015). The researchers put forward 12 extents of web site quality based on interviews conducted by clients and web site designers, and scores given by undergraduate students to their Web sites. These are (Özer, 2011):
  - ✓ Easy to understand: The information on the Web is designed so that the consumer can easily read and understand it.

- ✓ Purpose-compliant information: The belief that consumers can meet their needs with the information provided on the website.

- ✓ Specialized communication: Communication tailored to customer needs.

- ✓ Security: Confidentiality and security of financial and personal information.

- ✓ Response time: Response time after a request or load speed.

- ✓ Intuitive operations: Create an intuitive navigation system within the site.

- ✓ Visuality: Website aesthetics.

- ✓ Innovation: The creativity and uniqueness of your website.

- ✓ Emotional appeal: Emotional dimension including joy, happiness and sociability in web page interaction

- ✓ Consistent image: Website and firm image consistency

- ✓ Online integrity: The whole process of shopping or transaction is realized over the internet.

- ✓ Advantages over alternative channels: The use of the firm's website is superior to other tools.

- WebQual 2.0 Scale (Barnes & Vidgen 2001): At this scale, quality elements of the site, usefulness, design, information, reliability and empathy came to the forefront (Özer, 2011). However, the actual purchasing experience has not been addressed (Güllülü, Uçan & Karabulut, 2015).

- SiteQual Scale (Yoo & Donthu 2001): They improved a scale called SiteQual with nine items to measure website quality. The scale consists of four dimensions; ease of use, aesthetic design, processing speed and security. Like Loiacono et al. (2000)'s study is on WebQual, on SiteQual, university students have been selected with easy sampling as a sample. SiteQual does not include all the dimensions of the procurement process as in WebQual, so the quality of service with this scale can not be measured precisely (Özer, 2011).

- E-TailQ Scale (Wolfinbarger & Gilly 2003): They have improved a scale to determine consumers' attributes that contribute to the enjoyable, high-quality online shopping experience and the quality of online retailers. As a result of a three-stage study, eTailQ reached its final scale. In the first instance, online and offline focus groups have determined consumers' online and offline shopping experiences. The second step in the development of the scale was to classify the

expressions that they had achieved and finally to carry out an online survey study. The result of the scale-out process in the study includes the conclusion / reliability (including the product's accuracy in the website, timely delivery and accurate delivery of the order), the design of the website (including completion time, level of personalization, depth of information provided) the privacy/security (feelings of trust and trust on the site) and customer service (request and preparation to meet customer needs, problem solving and quick response). The authors reached the conclusion that the analysis of the 14-item scale indicated that quality is a strong link between Web site design and process outcome / reliability dimensions, that the customer service dimension has little effect and, surprisingly, is not a significant influence on the security / privacy dimension (Özer, 2011).

3.5.2.1 E-S Qual model

The steps of the E-S Qual scale improved by Parasuraman, Zeithaml and Malhotra (2005) are shown in the figure 3.5.

Step 1: Based on the information obtained from the existing literature and from a comprehensive qualitative study, it has expressed the meaning and field of e-service quality.

Step 2: They developed an e-service quality pre-scale that includes 121 items and 11 dimensions. After the two focus group interviews, they rearranged the scale.

Step 3: The restructured scale was applied via a questionnaire on the internet. According to this survey, three groups were formed. The first group evaluated the their favorite sites, the another group evaluated their second favorite sites, and the third group evaluated third favorite sites. A total of 549 questionnaires were administered.

Step 4: They developed a complex scale with a repetitive process:

Investigation cooefficient alpha and item-to total correlations by

Cancellation of items

Investigation of dimensionality through exploratory factor

Reappointment of items and reconfiguration of dimensions as

22-item, 4-dimensional E-S-QUAL scale (and 11-item, 3-dimensional E-RecS-

Step 5: Conducted CFA and validity tests on the final scales.

Step 6: Administered the final scales via online surveys to representative samples of customers of Amazon.com (n=653) and Walmart.com (n=205) to: (a) re-confirm the scales' reliability and validity and (b) assess the relative importance of the various e-service quality dimensions in influencing.
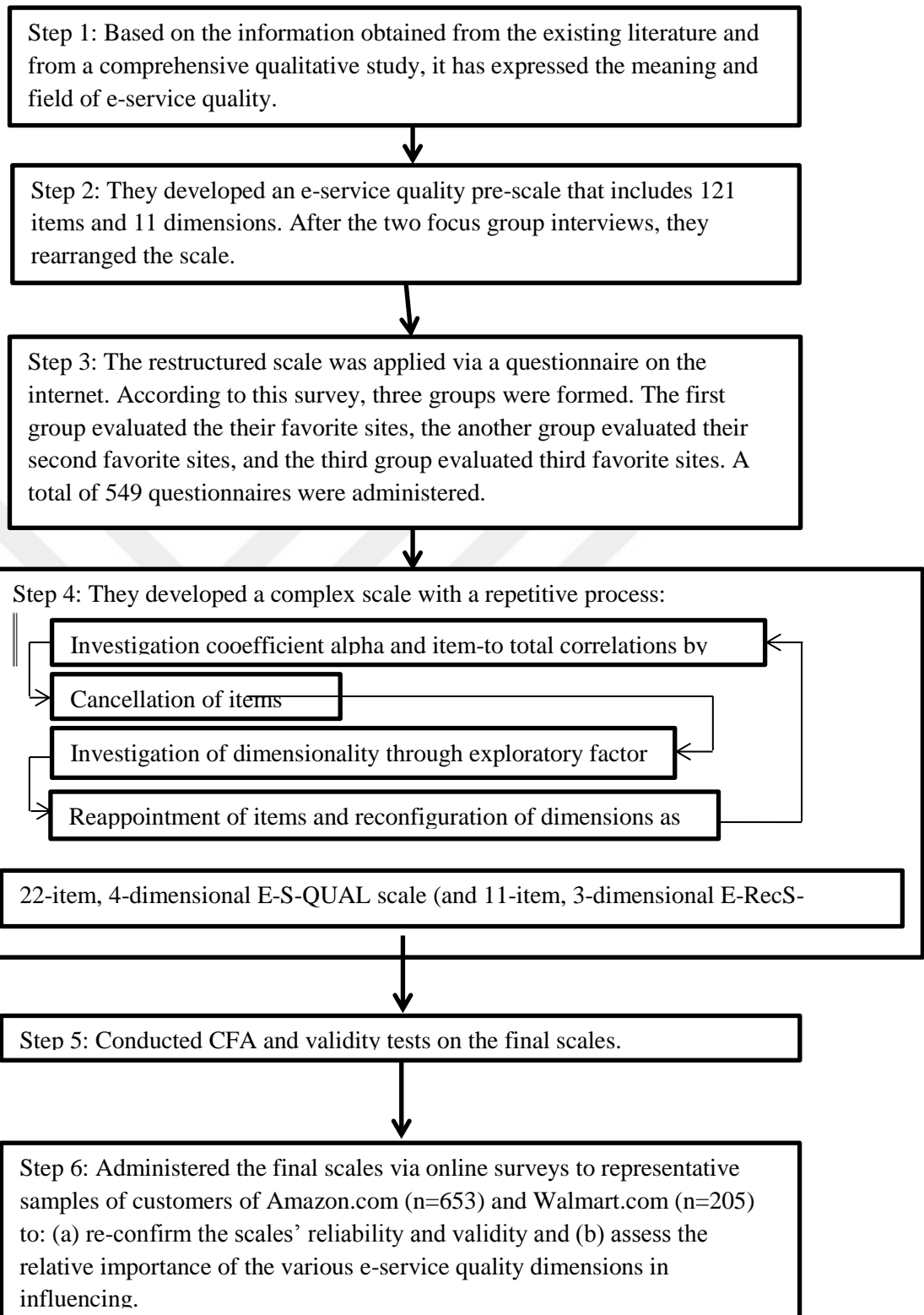
Figure 3.5 The Process of Improving the Electronic Service Quality Scale

Source: Parasuraman, Zeithaml & Malhotra, 2005, s.215

Researchers have identified the 11 dimensions to be based on in order to establish the first measure of electronic service quality as reliability, accessibility, flexibility, ease of navigation, efficiency, transaction completion, sensitivity, assurance / trust, site aesthetics, price information, customization / personalization (Özer, 2011,).

The 121-point expression pool that constitutes these 11 dimensions, including website features, was the first electronic service quality measure. The scale was purified by applying statistical methods to 549 available surveys obtained as a result of online application to consumers through a marketing research firm and eventually improved E-S-Qual scale including of 22 expressions and 4 basic dimensions (Özer, 2011).

The dimensions that researchers have achieved are (Güllülü, Uçan & Karabulut, 2016):

1. Efficiency: It is defined as speed and ease of connection to a site.
2. Fulfillment: A site, we seek to have the products and services we receive the product / service during the time frame promised, it is a process related to the delivery safely.
3. System Availability: It is about the proper functioning of the technical functions such as links, buttons of the website.
4. Privacy: It is about the security of the site and the guard of client knowledge.

Parasuraman and his colleagues examined the items they left on an edge before they established a scale to measure the quality of rescue services ensured by web sites. For this analysis, only the sub-clusters of those who complete these items (about 50% of the full sample) are used. Following the same recurrent process used in the improvement of E-S-QUAL, they created an e-rescue service quality scale (E-RecSQUAL) including of 11 items in three extents. (Parasuraman, Zeithaml & Malhotra, 2005):

- Responsiveness: Effective handling of problems and returns through the site.
- Compensation: The degree to which the site compensates customers for problems.
- Contact: The availability of assistance through telephone or online representatives.

4 CUSTOMER SATISFACTION

4.1 Definition Of Customer Satisfaction

Client satisfaction is undoubtedly one of the most important strategies for businesses. Since 1980s, the main issues discussed by companies of developed countries. Client satisfaction, which is the most critical factor in the profitability of companies, market shares and growth rates, depends mainly on loyalty (Eroğlu, 2005). Despite the many definitions of customer satisfaction, the most commonly used definition is the distinction between customer expectations and the current situation. If the customer has imagined or expected to buy goods or services, he would be satisfied, otherwise customer satisfaction would not be mentioned (Çınar, 2007). In this definition, it is seen that the customer is treated only as the expectation of the performance of the product and service. In addition to its performance and quality, the attitude towards the customer should not be ignored in the satisfaction of the customer. For this reason, it is necessary to identify who the business owners and staff are, what their feelings, thoughts and expectations are, and carry out ongoing research into existing and target customers (Çınar, 2007).

Customer satisfaction or dissatisfaction is not a part of the product or service but a perception that the customer personally loads into the product and service. For this reason, different customers may experience varying levels of satisfaction with the same experience or service. A client's perception of a product or service is influenced by his or her pre-emotional attitudes, from his own experience, from the socio-economic and cultural landscape he lived, from values, education, beliefs, psychology and various channels of communication. These perceptions of customers to products and services directly or indirectly affect the intention to purchase and customer satisfaction. From this point of view, it comes as a complex multi-element concept involving customer satisfaction, customers' lifestyles, past experiences, future expectations and social values (Burucuoğlu, 2011).

In the literature, it is seen that the expected quality and perceived quality of the service, performance evaluation related to the service offered, service price expectation, customer's mental status, customer experience, social interaction and other subjective factors play important roles in customer satisfaction (Karadeniz & Çuhadaroğlu, 2016).

4.2 The Benefits of Customer Satisfaction In Terms Of Enterprises

In today's competitive market environment, customer satisfaction is on the way to becoming the first rule, in addition to the intense efforts to make a difference or move forward one step ahead. Technological improvements and other implementations can be copied by competitors in a short period of time and this case can not protect the competitive benefit in the long run. It is difficult and costly to follow and implement customer relationships that are long and specialized with the other companies (Çınar, 2007).

In the globalizing world, businesses have become identifiable with value creation in the face of their competitors. Management strategies that contribute to customer value and satisfaction have re-evaluation power and skill by adding richness to the existing industry model to all stakeholders (Karadeniz & Çuhadaroğlu, 2016):

- Customer satisfaction is a very important issue for businesses. Satisfied customers have a loyalty to the firm. This creates better business performance.
- Other contributions of the customer satisfaction to management other than loyalty are; Satisfied customer purchases more products than other business of that customer, Customer has a positive contribution to the image of the business and has less interest in the products of the customer's other competing businesses as it has a positive opinion of the business.

4.3 Relationship Between Service Quality And Customer Satisfaction

Client satisfaction is an important issue affecting all organizations, whether quality or permanence, big or small, profit or non profit, global or local. In today's competitive marketplace, quality and client satisfaction play a critical role in long-term success and survival. When developed economies become service-oriented, customer representations have a critical role in this area. When a company serves customers, it defines the relationship between the overall customer attitude, service quality and client satisfaction towards the company. Different studies have been conducted on the positive correlation between service quality and client satisfaction. In another saying, if service quality is rapidly reduced, client satisfaction is significantly reduced, and if service quality expands substantially, client satisfaction increases quickly (Malik & Oberoi, 2017).

Researchers pay close care to the close links between service quality and client satisfaction. Cronin and Taylor stated that service quality is a pioneer in client satisfaction. The high perceived quality of service enhances client satisfaction and brings the opposite. The empirical studies examining the relationship between perceived service quality and client satisfaction revealed that service quality defines client satisfaction (George & Kumar, 20).

Quality in service sector; "Compliance with the needs and expectations of the customer, continuous success, complete and faultless implementation of the service offered is accepted as an element proportional to customer satisfaction which can be measured and evaluated". Although difficult, it is necessary to improve the quality of a service operation and to measure the quality of the services it provides for customer loyalty. Because the company can only improve the services it provides and provide customer satisfaction (Şahin & Şen, 2017)

5 RESEARCH ON THE EFFECT OF SERVICE QUALITY ON CUSTOMER SATISFACTION IN MOBILE BANKING

5.1 Purpose and Importance of the Study

The main purpose of this study is to investigate the effect of service quality on client satisfaction in mobile banking by using the E-S Qual scale developed by Parasuraman and colleagues. E-S Qual scale was created to evaluate the quality of service on web sites. E-S Qual has four service quality extents, efficiency, system availability, fulfillment and privacy. In this study, it is investigated whether these four extents of e-s qual scale have an effect on customer satisfaction in mobile banking.

5.2 Limitations of the Study

Since the survey was conducted via social media, individual bank customers who only used social media could participate in the study. It can be said that the participation is mainly from Istanbul because the survey is applied by the convenience method and the questionnaire is only sent to the links in İstanbul. For this reasons, it is difficult to make generalizations in terms of Turkey.

5.3 Methodology of the Study

In this study, convenience sample method is used in order to reach participants for the survey. According to Türkiye Bankalar Birliği, the total number of mobile banking users in 2017 is 40 million 681 thousand persons. Based on this total number, sample size was calculated as 384 people by using Morgan's sample size table. For this reason the survey was sent to 384 people and 350 of them participated in the survey.

The questionnaire used in the research includes three parts. The first section contains personal information. In the second part, there are 19 expressions consisting of E-S Qual measure improved by Parasuraman and his colleagues. Although there are 22 expressions with E-S Qual, 3 expressions are removed from the questionnaire because they do not fit mobile banking. The extracted expressions are: "It quickly delivers what I order", "It sends out the items ordered", "It has in stocks the items the company claims to have". Other 19 expressions were taken exactly as E-S Qual. In the second section, there are 8 items about efficiency, 4 items about sistem availability, 4 items about

fulfillment and 3 items about privacy. In the third part, there are four items about customer satisfaction. These items are taken from Özer (Özer, Argan & Argan, 2013). Totally disagree, disagree, neither agree nor disagree, agree and totally agree expressions were used in the survey.

The purpose of study is to investigate the effects of efficiency, system availability, fulfillment and privacy service quality extents on client satisfaction in mobile banking. The service quality elements Efficiency, Fulfillment, System Availability, Privacy dimensions constitute the independent variable of our work. The graphical model of study as follows:
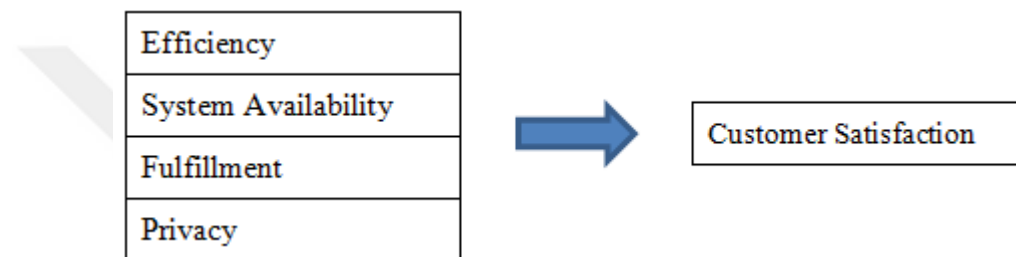
Figure 5.1 Research Model

In the hypotheses of the study, independent variables were established based on the four service quality dimensions of E-S Qual. The hypotheses of the research was formed by using figure 5.1 research model. Four hypotheses will be used in the study as follows:

H1: In mobile banking there is a significant positive relationship between **efficiency** and customer satisfaction.

H2: In mobile banking there is a significant positive relationship between **system availability** and customer satisfaction.

H3: In mobile banking there is a significant positive relationship between **fulfillment** and customer satisfaction.

H4: In mobile banking there is a significant positive relationship between **privacy** and customer satisfaction.

5.4 Analysis of study

Spss statistics 22 program was used in the study. Factor analysis, reliability analysis and regression analysis was used in this study.

5.4.1 Descriptive analysis

Table 5.1 Distribution of participants according to gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	153	43,7	43,7	43,7
	Male	197	56,3	56,3	100,0
	Total	350	100,0	100,0	

According to table 5.1, Of the 350 people who participated in the survey, 43.7% were women and 56.3% were men.

Table 5.2 Distribution of participants according to age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	95	27,1	27,1	27,1
	25-34	175	50,0	50,0	77,1
	35-44	55	15,7	15,7	92,9
	45-54	20	5,7	5,7	98,6
	55-64	5	1,4	1,4	100,0
	Total	350	100,0	100,0	

According to table 5.2, most of the participants in the survey are between the ages of 25-34 with a rate of 50%. The second place is between the ages of 18-25 with a rate of 27.1%.

Table 5.3 Distribution of participants according to income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-2000	114	32,6	32,6	32,6
	2000-3999	121	34,6	34,6	67,1
	4000-5999	68	19,4	19,4	86,6
	6000-7999	22	6,3	6,3	92,9
	8000 ve üzeri	25	7,1	7,1	100,0
	Total	350	100,0	100,0	

According to table 5.3, 34.6% of the participants in the survey have income levels between 2000-3999 TL, 32.6% under 2000 TL and 19.4% between 4000-5999

TL. 7.1% of the participants in the survey have income level over 8000 TL and 6.3% between 6000-7999 TL.

Table 5.4 Distribution of participants according to education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School	20	5,7	5,7	5,7
	University	255	72,9	72,9	78,6
	Master's Degree	69	19,7	19,7	98,3
	Doctorate	6	1,7	1,7	100,0
	Total	350	100,0	100,0	

Table 5.4 shows that the 72.9% of participants has university degree and 19.7% of participants has master's degree.

Table 5.5 Distribution of participants according to banks they use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Akbank	28	8,0	8,0	8,0
	Albaraka Türk	1	,3	,3	8,3
	Anadolu Bank	1	,3	,3	8,6
	Denizbank	10	2,9	2,9	11,4
	Garanti Bankası	47	13,4	13,4	24,9
	Halk Bank	17	4,9	4,9	29,7
	HSBC	1	,3	,3	30,0
	ING Bank	5	1,4	1,4	31,4
	İş Bankası	61	17,4	17,4	48,9
	Kuveyt Türk	7	2,0	2,0	50,9
	Qnbfinans Bank	34	9,7	9,7	60,6
	TEB	14	4,0	4,0	64,6
	Türkiye Finans Katılım	1	,3	,3	64,9
	Vakıfbank	18	5,1	5,1	70,0
	Yapıkredi	43	12,3	12,3	82,3
	Ziraat Bankası	62	17,7	17,7	100,0
	Total	350	100,0	100,0	

According to table 5.5, participants use Ziraat Bank with the highest rate of 17.7%. İş Bank followed Ziraat Bank with rate of 17.4%. 13.4% of participants use Garanti Bank and 12.3% of participants use Yapıkredi Bank.

5.4.2 Factor analysis

In factor analysis, in the table 5.6, value of Kaiser Meyer Olkin is 0,959. It is higher than 0,6. This means that it is appropriate for factor analysis of the sample volume. The value of Bartlett's Test of Sphericity is less than 0.05 so this value is significant and our sample is suitable for doing factor analysis. According to table 5.10, the most important factor explaining the quality of service is efficiency, second important factor is privacy, third critical factor is fulfillment and fourth critical factor is system availability.

Table 5.6 Kmo and Barlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,959
Bartlett's Test of Sphericity	Approx. Chi-Square	9913,084
	df	171
	Sig.	,000

Table 5.7 Communalities

	Initial	Extraction
Efficiency1	1,000	,898
Efficiency2	1,000	,865
Efficiency3	1,000	,907
Efficiency4	1,000	,871
Efficiency5	1,000	,889
Efficiency6	1,000	,903
Efficiency7	1,000	,825
Efficiency8	1,000	,901
Availability 1	1,000	,828
Availability 2	1,000	,884
Availability 3	1,000	,893
Availability 4	1,000	,921
Fulfillment1	1,000	,883
Fulfillment2	1,000	,907
Fulfillment3	1,000	,904
Fulfillment4	1,000	,889
Privacy1	1,000	,875
Privacy2	1,000	,920
Privacy3	1,000	,899

Extraction Method: Principal
Component Analysis.

Table 5.8 Total variance explained

Compone nt	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Varian ce	Cumulati ve %	Total	% of Varian ce	Cumulati ve %	Tota l	% of Varian ce	Cumulati ve %
1	14,38 5	75,708	75,708	14,38 5	75,708	75,708	6,72 6	35,401	35,401
2	1,111	5,848	81,556	1,111	5,848	81,556	3,39 9	17,889	53,290
3	,783	4,121	85,678	,783	4,121	85,678	3,39 7	17,881	71,171
4	,584	3,074	88,751	,584	3,074	88,751	3,34 0	17,580	88,751
5	,300	1,580	90,331						
6	,259	1,362	91,693						
7	,214	1,127	92,821						
8	,189	,994	93,815						
9	,169	,891	94,706						
10	,150	,791	95,497						
11	,141	,741	96,238						
12	,123	,648	96,886						
13	,119	,627	97,512						
14	,107	,561	98,074						
15	,086	,454	98,528						
16	,083	,436	98,964						
17	,074	,387	99,352						
18	,068	,356	99,708						
19	,055	,292	100,000						

Extraction Method: Principal Component Analysis.

Table 5.9 Component Matrix

	Component			
	1	2	3	4
Efficiency8	,915			
Efficiency3	,913			
Efficiency6	,912			
Efficiency5	,910			
Efficiency1	,908			
Availability 2	,907			
Fulfillment2	,895			-,298
Efficiency4	,890			
Efficiency7	,889			
Availability 1	,885			
Fulfillment1	,881			-,290
Efficiency2	,880			
Fulfillment3	,865			-,322
Fulfillment4	,863	,252		-,280
Availability 4	,836		,454	
Privacy1	,819	,403		
Privacy3	,802	,440		
Availability 3	,780		,508	
Privacy2	,760	,491		,270

Extraction Method: Principal Component Analysis.

a. 4 components extracted.

Table 5.10 Rotated Component Matrix

	Component			
	1	2	3	4
Efficiency2	**,802**	,297	,267	
Efficiency6	**,798**	,300	,292	,302
Efficiency1	**,794**	,266	,352	,268
Efficiency4	**,794**	,262	,301	,285
Efficiency8	**,787**	,278	,305	,333
Efficiency3	**,785**	,262	,402	
Efficiency5	**,755**	,301		,412
Efficiency7	**,708**	,326	,277	,375
Privacy2	,295	**,853**		
Privacy3	,315	**,795**	,289	,292
Privacy1	,371	**,748**	,364	
Fulfillment3	,389	,374	**,728**	,288
Fulfillment4	,371	,410	**,701**	,302
Fulfillment2	,465	,317	**,690**	,336
Fulfillment1	,442	,326	**,685**	,336
Availability3	,319		,250	**,818**
Availability4	,397		,304	**,786**
Availability2	,583	,303	,300	**,602**
Availability1	,504	,318	,381	**,573**

Extraction Method: Principal Component Analysis.

 Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

5.4.3 Reliability analysis

According to reliability analysis of efficiency dimension, in the table 5.11, the value of Cronbach's Alpha is 0,980. If Cronbach's Alpha value is greater than 0.7, it shows that the efficiency dimension is reliable.

Table 5.11 Reliability of efficiency

Cronbach's Alpha	N of Items
,980	8

According to reliability analysis of system availability dimension, in the table 5.12, the value of Cronbach's Alpha is 0,947. If Cronbach's Alpha value is greater than 0.7, it shows that the system availability dimension is reliable.

Table 5.12 Reliability of system availability

Cronbach's Alpha	N of Items
,947	4

According to reliability analysis of fulfillment dimension, in the table 5.13, the value of Cronbach's Alpha is 0,961. If Cronbach's Alpha value is greater than 0.7, it shows that the fulfillment dimension is reliable.

Table 5.13 Reliability of fulfillment

Cronbach's Alpha	N of Items
,961	4

According to reliability analysis of privacy dimension, in the table 5.14, the value of Cronbach's Alpha is 0,940. If Cronbach's Alpha value is greater than 0.7, it shows that the privacy dimension is reliable.

Table 5.14 Reliability of Privacy

Cronbach's Alpha	N of Items
,940	3

According to reliability analysis of customer satisfaction, in the table 5.15, the value of Cronbach's Alpha is 0,973. If Cronbach's Alpha value is greater than 0.7, it shows that the customer satisfaction is reliable.

Table 5.15 Reliability of Customer Satisfaction

Cronbach's Alpha	N of Items
,973	4

5.4.4 Regression analysis

Table 5.16 Model summary of efficiency

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,860[a]	,740	,740	,60060

a. Predictors: (Constant), Efficieny_Average

According to table 5.16, when we look at the R square coefficient, it is understood that 74% of the customer satisfaction depends on the efficiency factor. When we look at R value, there is a positive relationship of 0.860 between efficiency and customer satisfaction.

Table 5.17 Anova of efficiency

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	357,887	1	357,887	992,155	,000[b]
	Residual	125,529	348	,361		
	Total	483,416	349			

a. Dependent Variable: Satisfaction_Average

b. Predictors: (Constant), Efficieny_Average

The significance column indicates whether the relationship between the variables is significant or insignificant. If p value higher than 0.05, the relationship between the variables will be insignificant. Here in the table 5.17, the value in the significance column indicates that the relationship between the variables is statistically significant at the level of $p < 0.01$.

Table 5.18 Coefficients of efficiency

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,634	,112		5,635	,000
	Efficieny_Average	,867	,028	,860	31,498	,000

a. Dependent Variable: Satisfaction_Average

According to table 5.18, regression equation 5.1 is obtained as follows.

Equation 5.1

$$\gamma = 0.867 \times +0.634$$

In equation 5.1, dependent variable which refers to γ is customer satisfaction. Independent variable which refers to $\times$ is efficiency. The number 0.867 is the coefficient of the efficiency. The constant value is 0.634.

Table 5.19 Model summary of system availability

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,806[a]	,649	,648	,69809

a. Predictors: (Constant), Availability_Average

According to table 5.19, when we look at the R square coefficient, it is understood that 64.9% of the customer satisfaction depends on the system availability factor. When we look at R value, there is a positive relationship of 0.806 between efficiency and customer satisfaction.

Table 5.20 Anova of system availability

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	313,827	1	313,827	643,977	,000[b]
	Residual	169,589	348	,487		
	Total	483,416	349			

a. Dependent Variable: Satisfaction_Average

b. Predictors: (Constant), Availability_Average

In the table 5.20, here, the value in the significance column indicates that the relationship between the variables is statistically significant at the level of $p < 0.01$.

Table 5.21 Coefficients of system availability

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,020	,124		8,210	,000
	Availability_Average	,810	,032	,806	25,377	,000

a. Dependent Variable: Satisfaction_Average

According to table 5.21, regression equation 5.2 is obtained as follows.

Equation 5.2

$$\gamma = 0.810 \times +1.020$$

In equation 5.2, dependent variable which refers to γ is customer satisfaction. Independent variable which refers to $\times$ is system availability. The number 0.810 is the coefficient of the system availability. The constant value is 1.020.

Table 5.22 Model summary of fulfillment

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,851[a]	,724	,723	,61887

a. Predictors: (Constant), Fulfillment_Average

According to table 5.22, when we look at the R square coefficient, it is understood that 72.4% of the customer satisfaction depends on the fulfillment factor. When we look at R value, there is a positive relationship of 0.851 between efficiency and customer satisfaction.

Table 5.23 Anova of fulfillment

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	350,133	1	350,133	914,194	,000[b]
	Residual	133,283	348	,383		
	Total	483,416	349			

a. Dependent Variable: Satisfaction_Average

b. Predictors: (Constant), Fulfillment_Average

In the table 5.23 shows that here the value in the significance column indicates that the relationship between the variables is statistically significant at the level of p <0.01

Table 5.24 Coefficients of fulfillment

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,551	,120		4,607	,000
	Fulfillment_Average	,881	,029	,851	30,236	,000

a. Dependent Variable: Satisfaction_Average

According to table 5.24, regression equation 5.3 is obtained as follows.

Equation 5.3

$$\gamma = 0.881 \times +0.551$$

In equation 5.3, dependent variable which refers to γ is customer satisfaction. Independent variable which refers to $\times$ is fulfillment. The number 0.881 is the coefficient of the fulfillment. The constant value is 0.551.

Table 5.25 Model summary of privacy

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,764[a]	,583	,582	,76084

a. Predictors: (Constant), Privacy_Average

According to table 5.25, when we look at the R square coefficient, it is understood that 58.3% of the customer satisfaction depends on the privacy factor. When we look at R value, there is a positive relationship of 0.764 between efficiency and customer satisfaction.

Table 5.26 Anova of privacy

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	281,967	1	281,967	487,095	,000[b]
	Residual	201,449	348	,579		
	Total	483,416	349			

a. Dependent Variable: Satisfaction_Average

b. Predictors: (Constant), Privacy_Average

In the table 5.26, here the value in the significance column indicates that the relationship between the variables is statistically significant at the level of $p < 0.01$.

Table 5.27 Coefficients of privacy

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,207	,134		8,997	,000
	Privacy_Average	,764	,035	,764	22,070	,000

a. Dependent Variable: Satisfaction_Average

According to table 5.27, regression equation 5.4 is obtained as follows.

Equation 5.4

$$\gamma = 0764 \times +1.207$$

In equation 5.4, dependent variable which refers to γ is customer satisfaction. Independent variable which refers to $\times$ is privacy. The number 0.764 is the coefficient of the privacy. The constant value is 1.207.

6 CONCLUSION

This study was conducted to observe the effect of service quality on customer satisfaction in mobile banking applications using E-S Qual service quality scale. The sample of the study is composed of people who use individual mobile banking application. The survey was implemented through social media channels. The data of the study were tested by factor, reliability and regression analysis as in the related literature and similar studies.

Factor Analysis was performed to obtain meaningful variables with fewer and identifiable qualities in a large number of questions that measure service quality. After the analysis, it was seen that the variable of service quality can be evaluated in four dimensions as efficiency, system availability, fulfillment and privacy. As a result of the factor analysis, the most important factor explaining the quality of service emerges as efficiency in mobile banking. Second important factor is privacy, third important factor is fulfillment, and fourth important factor is system suitability. As a result of the reliability analysis, it was seen that the quality of service and customer satisfaction questions are highly reliable (all coefficients are greater than 0.80) in view of Cronbach's Alpha values. According to regression analysis, 74% of the customer satisfaction depends on the efficiency factor and 72.4% of the customer satisfaction depends on the fulfillment factor. 64.9% of the customer satisfaction depends on the system availability factor and 58.3% of the customer satisfaction depends on the privacy factor. In addition to this, hypotheses H1, H2, H3 and H4 have been accepted. As a result of regression analysis, there is a significant positive relationship between efficiency, system availability, fulfillment and privacy dimensions and customer satisfaction.

Different studies have been conducted on the positive correlation between service quality and client satisfaction. In another saying, if service quality is rapidly reduced, client satisfaction is significantly reduced, and if service quality expands substantially, client satisfaction increases quickly (Malik & Oberoi, 2017). In this study it is proven that there is positive relationship between service quality and customer satisfaction. This study supports the previous literature from this point. However, this study did not find an answer to the question of whether increasing the quality of service

would enhance customer satisfaction. Or did not find an answer to the question that will a reduction in service quality lead to a decrease in customer satisfaction.

According to the E-S Qual scale, the most important factors explaining the quality of service are determined as efficiency and fulfillment. In this study, when evaluated from the mobile banking point of view, the most important factor explaining service quality is determined as efficiency as in the E-S Qual. However, the fulfillment factor explaining the quality of service in our study is not the most important but it is in the third place. On the other hand, while the least important factor explaining the quality of service in E-S Qual is privacy, in this study, the system availability factor as the least important factor explaining the quality of service emerges. While privacy is the second most important factor explaining quality of service in this study, the second important factor in E-Qual is system availability.

Through this study, it is re-established that there is a relationship between electronic service quality and customer satisfaction in the literature. With this study, it has been revealed how much E-S Qual service quality dimensions affect customer satisfaction in mobile banking. For future studies, it can be said that the four dimensions of E-S Qual should not be ignored in terms of determining service quality dimensions in mobile banking. It should not be forgotten that the quality of mobile banking service may depend on broader aspects than these four dimensions. Since the survey was conducted via social media, individual bank customers who only used social media could participate in the study.

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APPENDIX: SURVEY QUESTIONS

1.Cinsiyetiniz ?

- o Kadın
- o Erkek

2.Yaşınız ?

- o 25 Yaş Altı
- o 25-34
- o 35-44
- o 45-54
- o 55-64
- o 65 Yaş ve Üzeri

3.Eğitim Düzeyiniz ?

- o İlkokul
- o Lise
- o Üniversite
- o Yüksek Lisans
- o Doktora

4.Gelir Düzeyiniz ?

- o 2000 TL ve Altı
- o 2000 TL - 3999 TL
- o 4000 TL - 5999 TL
- o 6000 TL - 7999 TL
- o 8000 TL ve Üzeri

5. Mobil bankacılığı ne zamanden beri kullanıyorsunuz ?

- o 6 Aydan Az
- o 6 Ay
- o 1 Sene
- o 5 Yıl ve Üzeri

6. Hangi bankanın mobil uygulamasını sıklıkla kullanıyorsunuz ?

- o Türkiye Cumhuriyeti Ziraat Bankası A.Ş.
- o Türkiye İş Bankası A.Ş.
- o Türkiye Garanti Bankası A.Ş.

- o Akbank T.A.Ş.
- o Yapı ve Kredi Bankası A.Ş.
- o Türkiye Vakıflar Bankası T.A.O.
- o Türkiye Halk Bankası A.Ş.
- o Finans Bank A.Ş.
- o Denizbank A.Ş.
- o ING Bank A.Ş.
- o Türk Ekonomi Bankası A.Ş.
- o HSBC Bank A.Ş.
- o Şekerbank T.A.Ş.
- o Türkiye Sınai Kalkınma Bankası A.Ş.
- o Citibank A.Ş.
- o Anadolubank A.Ş.
- o Burgan Bank A.Ş.
- o Alternatif Bank A.Ş.
- o Tekstil Bankası A.Ş.
- o BankPozitif Kredi ve Kalkınma Bankası A.Ş.
- o Turkland Bank A.Ş.
- o The Royal Bank of Scotland N.V.
- o Turkish Bank A.Ş.
- o Aktif Yatırım Bankası A.Ş
- o Fibabanka A.Ş.
- o Odeabank A.Ş.
- o Diğer:

Aşağıdaki ifadeleri verimlilik açısından değerlendiriniz.

	Kesinlikle Katılmıyorum	Katılmıyorum	Karasızım	Katılıyorum	Kesinlikle Katılıyorum
Uygulamam, ihtiyacım olan hizmetleri kolayca bulmamı sağlamaktadır	○	○	○	○	○
Uygulamam her yere kolayca ulaşmamı sağlar	○	○	○	○	○
Uygulamam, işlemleri hızla sonuçlandırmamı sağlamaktadır	○	○	○	○	○
Uygulamamda gösterilen bilgiler çok iyi düzenlenmiştir	○	○	○	○	○
Uygulamamın sayfaları çabuk yüklenmektedir	○	○	○	○	○
Uygulamamın kullanımı basittir.	○	○	○	○	○
Uygulamam hızla giriş yapabilmemi sağlar.	○	○	○	○	○
Uygulamamın düzenlemesi başarılıdır	○	○	○	○	○

Aşağıdaki ifadeleri sistem uygunluğu açısından değerlendiriniz.

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Uygulamam her zaman işlem yapmaya uygun durumdadır	○	○	○	○	○
Uygulamam hızla yüklenir ve hemen çalışır	○	○	○	○	○
Uygulamam hiç çökmez	○	○	○	○	○
Uygulamamda, bir işlemi gerçekleştirmek için tıkladığımda, sayfa donmaz	○	○	○	○	○

Aşağıdaki ifadeleri hizmet düzeyi açısından değerlendiriniz.

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
İşlemler taahhüt edildiği zaman aralıklarında gerçekleşmektedir	○	○	○	○	○
Uygulamam, uygun zaman diliminde işlemlerin yapılmasını sağlar	○	○	○	○	○
Uygulamamdaki bilgiler her zaman doğrudur.	○	○	○	○	○
Uygulamamda, işlemlerin yapılmasıyla ilgili kesin sözler verilir	○	○	○	○	○

Aşağıdaki ifadeleri gizlilik açısından değerlendiriniz.

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Uygulamam üzerinde yaptığım bankacılık işlemlerine ilişkin kayıtlar, korunmaktadır.	○	○	○	○	○
Uygulamam, kişisel bilgilerimi başka kurum ve kuruluşlarla paylaşmamaktadır	○	○	○	○	○
Uygulamam kredi kartı bilgilerimi korur.	○	○	○	○	○

Aşağıdaki ifadeleri değerlendiriniz.

	Kesinlikle Katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle Katılıyorum
Mobil uygulamadan memnunum	○	○	○	○	○
Uygulamayı kullanmak beni memnun eder	○	○	○	○	○
Mobil uygulamayı kullanırken keyif alırım	○	○	○	○	○
Uygulamayı aileme ve arkadaşlarıma kolayca tavsiye ederim	○	○	○	○	○

RESUME

I was born in Bolu on 04.09.1992. I completed my high school education at the Bolu Atatürk Anatolian High School between 2006 and 2010. I completed my undergraduate degree at Yildiz Technical University Department of Economics between 2010 and 2014. I worked as a systems and process development assistant in Turkon Container and Transportation Inc. between 2015 and 2016. I am currently continuing my masters education at Doğuş University in Business Administration.